

## Depth Filtration

### BECO CP..S Range - Depth Filter Sheets type for the Chemical, Cosmetic and for the Food Industry

BECO depth filter sheets of type CP..S are used for clarifying filtration in the chemical, cosmetic and food industry. The filter sheets are removing particles of a coarse, crystalline, amorphous or gel-like structure perfectly. An extremely wide range of filtration tasks can be performed according to given specifications, even with highly viscous liquids.

The specific advantages of the BECO CP..S type:

- ▶ Efficient filtration through high dirt holding capacity.
- ▶ Differentiated fibre and pore structure (internal surface area) for various applications and special process conditions.
- ▶ Reliable filtration effect through an ideal combination of the depth filter effect and the zeta potential.
- ▶ Maximum purity of raw material for minimum contamination on filtrate.
- ▶ Comprehensive quality assurance of all raw materials and additives. Intensive in-process control guarantees the consistent high quality of the final products.

BECO CP..S depth filter sheets are preferred for coarse filtration of highly viscous liquids. Due to the high porosity the depth filter sheets offer a high dirt holding capacity for gel-like particles, especially in processes with low filtration pressures. These BECO depth filters are mainly used in combination with filter aids for economic filtration of various products.

### Coarse filtration

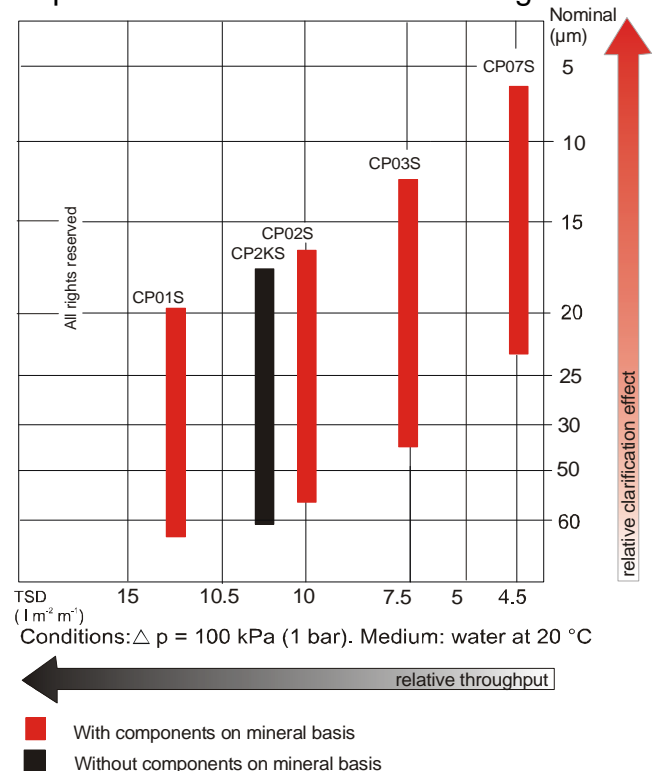
BECO CP 07S, CP 03S, CP 02S, CP 01S

BECO depth filters with filter active, mineral contents for clarification of liquids with a coarser crystalline and amorphous or gel-like particle structure. Suitable for highly viscous liquids.

#### Examples for application:

Polishing filtration of concentrated sugar solutions of approx. 65 Brix and filtration of edible oils, vegetable extracts, liquid gelatin, ointment bases consisting of primary products, oils, varnishes, polymer dispersions and separation of bleaching earth. Possible applications also include removing of activated carbon. Depending upon particle distribution of the activated carbon can even be achieved in a single step filtration process.

### Depth filter sheets BECO CP..S range



### Special depth filters

BECO CP 2KS

These BECO depth filters were especially developed to meet the high demands of the chemical industry. By the implementation and selection of high pure filter cellulose, the content of washable ions is extremely low. These depth filter sheets are produced with components containing low ions. Therefore the migration of iron or aluminum ions can be reduced to detection limit. The total removing of catalysts at high flow rates by means of the BECO CP depth filter sheets is also possible. Subsequent incineration permits virtually complete recovery of catalysts without loss.

## Physical data

### Selection Guidelines

Type	Article no.	Nominal retention rate [µm]	Thickness [mm]	Ash content [%]	Mass per unit area [g m <sup>-2</sup> ]	Bursting strength dry [kPa]	Bursting strength wet [kPa]	Vater Permeability at Δ p = 100 kPa [l m <sup>-2</sup> min <sup>-1</sup> ]
CP 07 S	27108	15.0	3.6	35.0	940	> 200	> 110	4290
CP 03 S	27123	20.0	3.7	35.0	890	> 150	> 90	7140
CP 02 S	27122	25.0	3.3	17.0	700	> 180	> 90	9520
CP 01 S	27121	30.0	4.6	17.0	850	> 180	> 100	12500
CP 2K S	27031	27.0	2.9	< 1.0	625	> 300	> 150	9760

## Chemical data

BECO CP..S depth filter sheets meet the requirements of recommendation XXXVI/1 regarding the LmBG\* by the BfR\*\*, and the test criteria of FDA directive CFR 21, § 177.2260.

Chemical compatibility of the depth filter material with respect to different solvents, contact time 3 hours at 20 °C

Solvent	Mechanical strength	Appearance of solvent	Solvent	Mechanical strength	Appearance of solvent	Solvent	Mechanical strength	Appearance of solvent
Aqueous solutions						Organic solvents		
Sugar solution 10 %	r	nc	Hydrochloric acid of 1 %	r	nc	Methanol	r	nc
With 1 % free chlorine	r	nc	3 %	r	nc	Ethanol	r	nc
With 1 % hydrogen peroxide		ncV	5 %	r	nc	Isopropanol	r	nc
With 30 % formaldehyde		ncV	10 %	r	nc	Toluol	r	nc
With 10 % ethanol	r	nc	Nitric acid of 1 %	r	nc	Xylol	r	nc
With 40 % ethanol	r	nc	3 %	r	nc	Acetone	r	nc
With 98 % ethanol	r	nc	5 %	r	nc	Methyl ethyl ketone	r	nc
Caustic soda lye of 1 %	r	nc	10 %	r	nc	n-Hexan	r	nc
2 %	r	nc	Sulphuric acid of 1 %	r	nc	Dioxan	r	nc
4 %	r	0	3 %	r	nc	Cyclohexan	r	nc
Ammonia solution of 1 %	r	nc	5 %	r	nc	Tetrachlorethylene	r	nc
3 %	r	nc	10 %	r	nc	Ethylen glykol	r	nc
5 %	r	nc	Acetic acid of 1 %	r	nc	Dimethyl sulfide	r	nc
			3 %	r	nc	N,N-Dimethyl formamide	r	nc
			5 %	r	nc			
			10 %	r	0			
r = resistant			nc = no change			0 = slight opalescence		

\* = Law on Food Products and Articles of Daily Use; \*\* = Federal Institute of Risk Appreciation

## Materials

BECO depth filter sheets of type CP..S are made from extremely pure natural materials and cationic resin. They contain varying quantities of finely fibrillated cellulose fibres of hardwood and softwood, high quality kieselguhr and perlite.

## Instructions for correct use

When inserting the depth filter sheets into the sheet filters, handle carefully. Avoid knocks, distortion or abrasion. Never use a damaged filter sheet.

### Insertion of the depth filter sheets:

Depth filter sheets have one rough side and one smooth side each. The rough side faces the liquid to be filtered (= upstream). The smooth side is the filtrate side of the filter sheet (= downstream). When inserting take care to ensure that the smooth side is facing the filtrate plate.

### Filter Preparation

Prior to the first filtration, it is recommended to pre-rinse the closed filter with 50 liters of water per square meter at 1.25 times the flow rate. As a rule, this equals a rinsing time of 10 to 20 minutes depending on the application. Test the entire filter for leakage at maximum operating pressure.

High-proof alcohol solutions and chemical products that cannot be used with water for pre-rinsing should be circulated for 10 to 20 minutes. Dispose of the solution after rinsing.

## Sterilization

BECO filter sheets may be sterilized with saturated steam of **134 °C** or hot water. The pressed packed filter has to be slightly loosened. Make sure to sterilize the entire filter system thoroughly. Final pressure should be applied to the filter package once the entire filter has cooled down.

### Sterilization with steam:

Steam quality: Steam has to be free of foreign particles and impurities  
Temperature: max. **134 °C (saturated steam)**  
Duration: approx. 20 minutes after steam has exited from all filter valves

### Sterilization with hot water:

Water quality: The water should be softened and be free of impurities.  
Temperature: > 85 °C  
Duration: 25 minutes, with the temperature achieving 85 °C at the valves  
Pressure: adjust to at least 0.5 bar at the filter outlet

### Important notice:

**All vent and discharge valves must be slightly opened for optimal sterilization effect and to avoid the steam shock.**

## Regeneration/back-washing

The high capacity of the BECO depth filter sheets can be used to a greater or lesser degree for filtration in damp environments via easy back-washing using softened water. In this way they contribute considerably to the reduction of filtration cost.

Proceed as follows in the regeneration:

Cold rinsing: in direction of filtration approx. 5 - 10 minutes  
Temperature: 15 °C - 20 °C  
Duration: approx. 5 minutes  
Hot rinsing: against direction of filtration  
Temperature: 60 °C - 80 °C  
Duration: approx. 10 minutes

## Safety

If used properly no negative effects are known. Safety regulations according to DIN 52 900. An EC safety data sheet is available upon request.

## Waste disposal

BECO depth filters can be composted due to their composition. Please observe the current valid official directives relation to filtration products.

## Storage

Depth filters consist of strongly adsorbing materials. Careful handling is necessary during transportation and storage. Depth filters must be stored in a dry place that is well aerated.

BECO depth filter sheets are intended for immediate use and should be used within 36 months after delivery.

## Forms of supply

BECO depth filters can be supplied for all current filter sizes, square or round. Special formats are available at request.

HS customs tariff number: 4812 00 00

## Quality Assurance according to DIN EN ISO 9001:2000

The comprehensive Quality-Management-System of BEGEROW has been certified from DQS according to DIN EN ISO 9001:2000.

The certification confirms the functioning of the total system of Quality Assurance from product development through contract controls, choice of suppliers as well as acceptance controls, production and final examination all in the way to storage and dispatch.

Extensive quality assurance measures comprise the adherence to technical criteria regarding the function as well as the confirmation of chemical purity and quality recognized as safe under the German law governing the production of foodstuffs and beverages.



Reg. No. 000480 QM

All information is given to the best of our knowledge. BECO depth filter sheets meet the requirements of recommendation XXXVI/1 regarding the LmBG (German Law on Food Products and Articles of Daily Use) by the BfR (Federal Institute of Risk Appreciation), and the test criteria of FDA directive CFR 21, § 177.2260. The application of our products outside the test criteria specified in the technical information requires separate verification by the customer. In such cases, no liability for any damage whatsoever can be accepted.

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